# COOPERATIVE SWEET SORGHUM VARIETY TESTS FOR SUGAR DURING 1970 IN FOUR SOUTHERN STATES

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# COOPERATIVE SWEET SORGHUM VARIETY TESTS FOR SUGAR DURING 1970 IN FOUR SOUTHERN STATES

By Kelly C. Freeman, Dempsey M. Broadhead, Otto H. Coleman, and Natale Zummo<sup>1</sup>

#### SUMMARY

Fourteen varieties of sweet sorghum were evaluated for potential sugar production at one or more locations. 'Mer. 68-7' and 'Mer. 68-10' produced more sugar per ton of stalks than 'Rio' (standard) in seven of nine and eight of eleven tests respectively. 'Mer. 64-3' ('Roma') exceeded 'Rio' by 44 percent in pounds of sugar per acre at Weslaco, Tex. Drought of various degrees and periods of duration extended the development period (planting to harvest) for some varieties.

## INTRODUCTION

Experimental plots designed to test eleven sweet sorghum varieties for sugar were planted in four southern states—Georgia, Louisiana, Mississippi and Texas. These tests were conducted in cooperation with several agencies and the U. S. Sugar Crops Field Station, Meridian, Miss. (A complete list of cooperating stations and personnel appears at the front of this report).

#### TEST VARIETIES AND METHODS

All tests included varieties 'Rio' and 'Mer. 68-10' and all except Weslaco, Tex. included 'Mer. 67-1' and 'Mer. 67-15'. 'Mer. 64-7', 'Mer. 67-14', and 'Mer. 68-7' were included in tests in Georgia, Louisiana, and Mississippi. The varieties 'Mer. 56-15', 'Mer. 63-3', 'Mer. 66-1' and 'Brawley' were included at Lubbock, Tex. and 'Mer. 64-3' ('Roma'), 'Mer. 65-2' and 'Mer. 67-17' were included in the test at Weslaco, Tex.

A randomized complete block design with five

replications of each variety was used. Each plot included three rows, with an area of 1/200-acre. The seed in most tests was planted with hill-drop planters, and the plants were thinned to three or four per hill. In remaining tests the seed was drilled with a spout drill and the plants were thinned to 6- to 8-inch spacing. The plots were cultivated with conventional tractor cultivators. All sorghum was harvested when the seed was ripe.

Ten to thirty stalks from each plot were milled to obtain juice for Brix and sucrose analysis. At Meridian, Miss.; Cairo, Ga.; and Houma, La. the stalks were harvested and milled, and the juice analyzed the same day. At Weslaco, Tex., the stalks were milled immediately after harvest, but the juice was quick-frozen and analyzed later.

The stalk samples from Baton Rouge and Bossier City, La. and from Lorman, Poplarville, State College, and Stoneville, Miss. were milled within 24 hours after harvest. The juice from the stalk samples at Lubbock, Tex. was treated with mercuric chloride and shipped to Meridian for analysis.

#### RESULTS AND DISCUSSION

Table 1 shows yield of stripped stalks in percentage of 'Rio'. Data for 'Rio', the standard variety, is in tons of stalks per acre. 'Rio' averaged 14.7 tons of stalks per acre and ranged from 11.0 to 21.0 tons at Poplarville and Meridian, Miss., respectively. 'Mer. 64-7' and 'Mer. 67-15' were 116 and 104 percent of 'Rio' in stalk yield. All other varieties, except 'Mer. 64-3' ('Roma') 'Mer. 65-2' and 'Mer. 67-17' at Weslaco, Texwere lower in stalk yield than 'Rio'. 'Mer. 64' ('Roma'), 'Mer. 65-2' and 'Mer. 67-17' at W laco, Tex. were 151, 135 and 116 percent of 'I in yield of stalks per acre.

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Table 2 shows degrees Brix of extracted juice of varieties, in percentage of 'Rio' Brix. 'Rio' juice averaged 19.4 degrees Brix. The 14.9 Brix of 'Rio' at Houma, La. was unusually low. 'Mer. 68-10' had a higher Brix than 'Rio' at all locations except Poplarville, Miss. 'Brawley' Brix was 112 percent of 'Rio' at Lubbock, Tex. 'Mer. 64-3' ('Roma') and 'Mer. 65-2', which are varieties exhibiting potential for commercial culture, had Brix readings of 98 and 94 percent of 'Rio'.

Sucrose as a percentage of 'Rio' yield is presented in table 3. 'Mer. 67-1', 'Mer. 67-15', 'Mer. 68-7' and 'Mer. 68-10' were higher in sucrose than 'Rio'. At Lubbock, Tex., 'Mer. 56-15', 'Mer. 66-1' and 'Brawley' were higher than 'Rio' in sucrose.

Table 4 lists the apparent purity of sucrose as a percentage of 'Rio' purity. The mean apparent purity for 'Rio' was 74.2 percent. The purity of 'Rio' at Cairo, Ga. and Stoneville, Miss. was unusually low, which is reflected in a higher-than-expected mean percentage for 'Mer. 64-7', 'Mer. 67-1', 'Mer. 67-14', 'Mer. 67-15', 'Mer. 68-7' and 'Mer. 68-10'.

Calculated sugar per ton of stalks of the varieties as a percentage of 'Rio' sugar yield is shown in table 5. The poor performance of 'Rio' at Cairo, Ga. resulted in a higher mean percentage for 'Mer. 64-7', 'Mer. 67-1', 'Mer. 67-14', 'Mer. 67-15', 'Mer. 68-7' and 'Mer. 68-10' than expected.

Table 6 shows calculated sugar per acre as a percentage of 'Rio' yield per acre. The most significant item in this year's test results was the yield of 'Mer. 64-3' ('Roma') (144% of 'Rio')

at Weslaco, Tex. Weather conditions for early development of plants was extremely poor at Cairo, Ga. Improved later weather conditions favored later maturing varieties.

Table 7 shows the number of days from planting to harvest. 'Rio' averaged 126 days from planting to harvest and ranged from 98 at Bossier City, La. to 155 at Baton Rouge, La. The number of days from planting to harvest is related to rainfall during the growing season. The conditions at Meridian, Miss. (one irrigation) and Weslaco, Tex. (three irrigations) favored uninhibited development of the plants, whereas in other locations drought of various degrees and duration extended the development period for some varieties.

Table 8 contains data on diseases of economic importance on fourteen sweet sorghum sugar varieties. Diseases were rated on a scale of 0 to 4, with four representing destruction of 25% or more of leaf tissue. 'Mer. 67-14' was susceptible to anthracnose at Meridian, Miss. Every variety had gray leaf spot infection at one or more locations, except at Lubbock, Tex., where no disease was of economic importance. Symptoms of gray leaf spot appeared on the leaves late in the growing season, and though extensive in destruction of leaf tissue, the disease did not greatly reduce the quality of the stalk juice.

Rust ratings of 3 or above were recorded on 'Mer. 64-7' and 'Mer. 68-7' at Houma, La. and on 'Mer. 67-17' and 'Mer. 68-10' at Weslaco, Tex. Zonate leaf spot was very conspicious on 'Rio', 'Mer. 67-1', 'Mer. 67-14', 'Mer. 67-15' and 'Mer. 68-7' in the three Louisiana tests.

TABLE 1.—Yield of stripped stalks per acre as percent of 'Rio'

VI	Standard						T	Test variety	ety					!
Location	'Rio' (T/A)	'Mer. 64-7'	'Mer. 67-1'	'Mer. 67-14'	'Mer. 67-15'	'Mer. 68-7'	'Mer. 68-10'	'Mer. ' 56-15'	'Brawley'	'Mer. 63-3'	'Mer. 64-3'	'Mer. 65-2'	'Mer. 66-1'	Mer. 67-17
GEORGIA:								!			,			
Cairo	. 12.5	118	20	146	119	98	28	i	ļ					
LOUISIANA:						i	2			!			į	
Baton Rouge	13.8	127	67	117	110	93	78	į	į					
Bossier City	13.2	138	28	105	101	77	85						ļ	İ
Houma	18.4	93	62	106	94	70	72	İ	1					
Mean	15.1	119	62	109	102	08	77							
MISSISSIPPI:														
Lorman	_ 16.4	95	59	95	88	74	77	ļ	i	į				
Meridian	21.0	101	9	112	100	92	85	1	ļ				ļ	
Poplarville	- 11.0	114	38	125	130	69	90	1	ļ					1
State College	11.7	126	40	122	104	69	75	-	į					
Stoneville	13.6	125	46	117	101	81	78	1	ļ	1	1			
Mean	14.7	112	20	114	105	74	74	1						
TEXAS:														
Lubbock	- 16.8		59	1	06		11	70	57	74	į		74	
Weslaco	. 16.2			!	1		83	ļ	ļ		151	135		116
Mean	16.5		-				08							
Mean of Means	14.7	116	69	68	104	80	7.7	70	57	74	151	135	74	116

Table 2.—Soluble solids as percent of 'Rio'

Test variety  r. 'Mer. 'Mer. 'Brawley'  f. 68-10' 56-15'  112  110  110  110  100  100  100  10				TABL	LABLE 2.—-Soluble solids as percent of Kio	nuone so	uasasb	ercent c	J. 1.10						
Rio'         'Mer.		Standard						L.	Pest vari	iety					
uge     20.8     96     101     95     104     106     110       tty     21.1     88     95     87     102     108     111       14.9     105     90     95     107     96     106       18.9     96     95     104     103     109       18.9     96     95     104     103     109       18.8     86     99     98     106     101       19.7     97     90     101     107     102       ege     20.1     94     102     96     101     107     102       20.0     91     97     98     103     104     102       20.0     91     97     98     103     104       19.0     97     98     99     103     104       19.0     97     98     99     103     104       19.0     97     98     99     104     100       19.0     96     98     104     104     104       19.0     90     97     104     104     104       10.0     10.0     10.0     10.0     10.0     10.0       10.0     10.0     10		'Rio' legrees Brix)	'Mer. 64-7'	'Mer. 67-1'	'Mer. 67-14'	'Mer. 67-15'	'Mer. 68-7'	'Mer. 68-10'	'Mer. 56-15'	Brawley'	'Mer. 63-3'	'Mer. 64-3'	Mer. 65-2	'Mer. 66-1'	'Mer. 67-17'
uge     20.8     96     101     95     104     106     110       14.9     105     90     95     87     102     108     111       18.9     105     90     95     107     96     106     106       18.9     96     95     92     104     108     109	GEORGIA: Cairo	186	63	90	20	109	901	61.7							
uge     20.8     96     101     95     104     106     110       fty     21.1     88     95     87     102     108     111       14.9     105     90     95     107     96     106       18.9     96     95     104     109     109       18.8     86     99     98     106     101       19.7     97     90     101     105     91       ee     20.1     94     102     96     101     102       ege     20.1     94     102     96     101     102       20.0     91     96     101     107     102       20.0     91     96     99     103     102       19.0     96     98     108     104       19.0     96     98     104     104       20.0     91     96     98     104       20.0     90     98     104     104       20.0     90     90     98     104     104       20.0     90     90     90     104     104     104       20.0     90     90     90     104     104     104 <td>LOUISIANA:</td> <td></td> <td>3</td> <td>3</td> <td>H</td> <td>5</td> <td>700</td> <td>777</td> <td> </td> <td></td> <td>1</td> <td></td> <td> </td> <td> </td> <td>j</td>	LOUISIANA:		3	3	H	5	700	777			1				j
ttp         21.1         88         95         87         102         108         111         —           14.9         105         90         95         107         96         106         106         —           18.9         96         95         99         99         106         101         —         —           e         20.4         97         98         81         96         101         99         99         106         101         99         99         106         101         99         99         107         102         —         99         99         107         102         —         99         99         107         102         —         99         99         103         102         —         99         99         103         102         —         99         99         103         104         99         99         104         99         99         104         90         99         99         104         90         99         104         90         90         90         90         90         90         90         90         90         90         90         90         90         <	Baton Rouge	20.8	96	101	95	104	106	110	į						
14.9   105   90   95   107   96   106   108   109   18.9   96   95   92   104   103   109   109   108   109   108   108   109   108   108   109   10	Bossier City	21.1	88	95	87	102	108	111			<b>!</b>	•			
18.9     96     95     104     103     109     —       20.4     97     98     81     96     105     105       e     18.8     86     99     99     101     105     101       ege     20.1     94     102     96     107     102     —       ege     20.1     94     102     96     107     102     —       21.2     81     95     90     97     105     104     —       20.0     91     97     98     103     102     —       19.0     19.0     96     98     104     104     112       19.0     19.0     96     98     104     104     106       20.0     90     96     98     104     104     104       19.0     19.4     98     96     107     104     112	Houma	14.9	105	90	95	107	96	106	1					. 1	
20.4       97       98       81       96       105       105         18.8       86       99       98       106       101         ege       19.7       97       90       101       105       91       99         20.1       94       102       96       101       107       102       99         20.2       91       97       93       99       103       102       99         20.0       91       97       93       99       103       100       112         19.0       96       98       103       104       100       112         19.0       19.0       96       98       104       104       106         20.0       10.4       93       96       98       104       106       10	Mean	18.9	96	95	95	104	103	109						 	
e     20.4     97     98     81     96     105     105       18.8     86     99     98     106     101       ege     19.7     97     90     101     105     91     99       20.1     94     102     96     101     107     102       21.2     81     95     90     97     104       20.0     91     97     93     99     103     102       19.0     96     98     103     104     112       19.0     96     98     104     104     112       20.0     90     96     98     106     104       19.4     93     96     93     101     106     112	MISSISSIPPI:														
ege 19.7 97 90 101 105 91 99 98 106 101 ege 19.7 90 101 105 91 99 91 99 91 91 99 91 91 99 91 91 91	Lorman	20.4	97	88	8	96	105	105		İ					
ege 20.1 94 102 96 101 107 102	Meridian	18.8	98	66	66	98	106	101					İ	1	
ege 20.1 94 102 96 101 107 102 21.2 81 95 90 97 105 104 20.0 91 97 98 99 103 102 20.0 91 95 96 98 103 102 21.1 96 98 109 104 112 20.0 20.0 20.0 20.0 20.0 20.0 20.0	Poplarville	19.7	97	06	101	105	16	66	ļ	į			<b>:</b>   	i	
21.2     81     95     97     105     104       20.0     91     97     93     99     103     102       21.1     96     98     104     104     112       19.0     19.0     104     106     112       20.0     10.4     106     106     112       19.4     93     96     93     101     105     107     160     112	State College	20.1	₹6	102	96	101	107	102		,			!		!
20.0     91     97     93     99     103     102       21.1     96     98     108     100     112       19.0     20.0     104     106     12       ean of Means     19.4     93     96     93     101     105     107     160     112	Stoneville	21.2	81	95	90	97	105	104							
21.1   96   98   108   100   112   19.0     20.0     20.0     98   98   101   105   107   100   112	Mean	20.0	16	26	93	66	103	102		****					
21.1     96     98     108     100     112       19.0     19.0     104     104     104     104       20.0     20.0     106     106     12       lean of Means     19.4     93     96     93     101     105     107     160     112	TEXAS:														
19.0	Lubbock	_ 21.1	-	96	1	86	ļ	108	100	112	93		ļ	104	
ean of Means 19.4 93 96 93 101 105 107 160 112	Weslaco	19.0		-			_	104	İ		1	98	94		90
19.4 93 96 93 101 105 107 160 112	Mean	20.0		-	1		-	106			1		1	******	
	Mean of Means	19.4	93	96	93	101	105	107	160	112	93	86	94	104	8

Table 3.—Juice sucrose as percent of 'Rio'

						١								
	Standard						H	Test variety	ety					
Location	'Rio' (percent)	'Mer. 64-7'	Mer. 67-1	'Mer. 67-14'	'Mer. 67-15	'Mer. 68-7'	'Mer. 68-10'	'Mer. 56-15'	'Brawley'	'Mer. 63-3'	'Mer. 64-3'	'Mer. 65-2'	'Mer. 66-1'	'Mer. 67-17'
CDOBOTA	2601216								•		('roma')			
Cairo	7 6 1	108	, .	301	36	200								
LOUISIANA:	# •	100	# T T	007	621	179	121				1			
Baton Rouge	16.0	85	108	95	104	109	110	į	ļ		į			
Bossier City	16.5	79	<b>%</b>	22	66	107	104	]	1					
Houma	11.4	102	85	89	106	96	106		ļ					
Mean	14.6	68	92	87	103	104	107							
MISSISSIPPI:														
Lorman	. 16.0	95	101	79	94	110	106	İ	į			į		
Meridian	. 14.5	81	97	101	86	106	97		ļ	1				ļ
Poplarville	15.4	94	93	86	100	68	94		ļ					
State College	15.8	36	111	66	101	113	110	ļ	į					}
Stoneville	15.4	99	101	87	92	101	103			ĺ	İ			
Mean	15.4	98	101	93	26	104	102							
TEXAS:														
Lubbock	17.0		100	Ì	96	1	102	102	109	95	]		107	
Weslaco	13.9	-			1	]	107	i			26	90	Ì	82
Mean	15.4	ļ	1				104							
Mean of Means	14.4	94	102	95	105	110	109	102	109	95	26	06	107	82

TABLE 4.—Apparent purity as percent of 'Rio'

					*		- For some	201						
	Standard						Ĭ.	Test variety	ety		1			
Location (C	'Rio' (Coefficient of) apparent purity	'Mer. 64-7'	'Mer. 67-1'	'Mer. 67-14'	'Mer. 67-15'	'Mer. 68-7'	'Mer. 68-10'	'Mer. ' 56-15'	'Brawley'	'Mer. 63-3'	'Mer. 64-3'	'Mer. 65-2'	'Mer. 66-1'	'Mer. 67-17
GEORGIA:		ļ									( noma )			
Cairo	8.99	116	119	114	121	133	108							
LOUISIANA:					ĺ	}	2	j						
Baton Rouge	77.1	83	107	100	100	109	00							
Bossier City		90	83	06	8	101	e c	į		1	i	1	-	
Houma	76.2	16	95	35	100	101	100				İ			
Mean	76.9	6	97	140	٤	00	8							
		1	16	25	33	707	86		-			İ		
MISSISSIPPI:														
Lorman	78.5	86	102	86	76	104	100							
Meridian	77.1	95	8	102	g	101	9 8			1			1	ļ
Poplarville	78.0	96	103	8	3 6	1 0	3 8	1	•	1		-		
State College	78.5	8	108	3 2	8 8	200	9 9						Ì	1
Stoneville	67.0	) t	) T	* * * * * * * * * * * * * * * * * * * *	9 6	607	007			i			1	1
		10	114	∓04	TOT	104	106	]				1	1	
Mean	76.0	95	105	101	86	102	101							
TEXAS:														
Lubbock	- 80.3	İ	104	İ	66		92	102	26	103			409	
Weslaco	_ 73.5	!			İ	į	103	İ	:		86	ę.	201	8
Меал	0 24											3	-	2
mean	(0.3	-				į	66	-	İ					
Mean of Means	74.2	101	106	103	104	106	102	102	40	103	80	ų,	95	8
							1	1	5	201	0	e.	100	2

TABLE 5.—Calculated sugar per ton as percent of 'Rio'

					}	,		/						
<b>ΰ</b>	Standard						Tes	Test variety	Ŀ					
Location	Rio' (Ib/T)	Mer. 64-7	Mer. 67-1	'Mer. 67-14'	'Mer. 67-15	Mer. 68-77	'Mer. 68-10'	Mer. 56-15	'Brawley'	'Mer. 63-3'	Mer. 64-3'	Mer. 65-2'	'Mer. 66-1'	'Mer. 67-17'
GEORGIA											( troilla )			
Cairo	155.2	119	197	7.	141	100	261							
LOUISIANA:				1	<b>4</b>	5	1		i	ļ	1	1	Ì	
Baton Rouge	220.3	79	112	95	103	111	110	İ	i					
Bossier City	227.7	53	23	<u>ن</u>	86	108	101							-
Houma	155.9	100	83	87	901	26	106							
Mean	201.3	84	91	85	102	105	106							
MISSISSIPPI:														
Lorman	222.6	₽ <b>6</b>	102	78	92	113	106	İ	į	1				
Meridian	199.6	79	93	103	97	107	84	İ						ļ
Poplarville	-213.5	16	95	26	26	88	91						1	ļ
State College	219.8	16	115	101	100	116	115	1						1
Stoneville	195.1	58	110	83	93	104	107		-			!		
Mean	_ 210.1	83	103	94	96	106	103							
TEXAS:														
Lubbock	239.6		102	1	95	1	100	103	107	97	ļ		109	
Weslaco	186.0			-		1	109	İ	-	•	96	87	1	92
Mean	212.8		-				104							
Mean of Means	194.8	95	106	86	108	115	110	103	107	97	96	87	109	76

TABLE 6.—Calculated sugar per acre as percent of 'Rio'

		TAB	· · · · · · · · · · · · · · · · · · ·	Carcara	LABLE O.—Cuchele sagar per acre as percent of the	per acr	a as per	cent of	D:O					
	Standard						I	Test variety	ety					
	'Rio'	Mer.	'Mer.	'Mer.	Mer.	'Mer.	'Mer.	•	'Brawley'	'Mer.	'Mer.	Mer.	'Mer.	'Mer.
Location	(lb/A)	64-7	67-1,	67-14'	67-15	68-7	68-10,	56-15'		63-3,	64-3"	65-2	66-1,	67-17
											( Point )			
GEORGIA:							;							
Cairo	1940	141	83	170	168	114	66		-	***************************************		-		1
LOUISIANA:														
Baton Rouge	3040	100	75	111	114	103	82				-		İ	-
Bossier City	3006	101	45	16	66	83	83	-		1				
Houma	2868	93	52	95	100	49	7.7							
Меап	2971	86	57	93	104	84	82	1	1				*****	
MISSISSIPPI:														
Lorman	3651	83	09	75	82	83	8			1				
Meridian	4193	79	62	115	97	81	1.1	i	ì	ł			į	
Poplarville	2348	104	36	121	127	19	22	Ì						-
State College	2572	115	46	124	104	8	85	i	]	1				
Stoneville	2654	73	50	105	94	84	84	1	1		-			
Mean	3084	95	51	108	101	78	91							
TEXAS:														
Lubbock	4025	İ	09	į	98	-	71	72	19	77			8	
Weslaco	3013		-				97				144	117		88
Mean	3519		1				84		1			1		
Mean of Means	2878	110	64	124	115	95	98	72	61	7.1	144	117	80	68

Table 7.—Days from planting to harvest

						1	,	***						
ĬØ.	Standard						T	Test variety	ity					-
ı		Mer.	1	Mer.	'Mer.	'Mer.	'Mer.	Mer.	'Mer. 'Brawley' 'Mer.	'Mer.	Mer.	Mer.	Mer.	'Mer.
Location	'Rio'	64-7	67-1,	67-14	67-15	.2-89	68-10,	56-15		63-3,	64-3	65-2	66-1,	67-17
											('Roma')			
GEORGIA:										i				
Cairo	115	142	115	142	142	115	115	1		-	i			
LOUISIANĄ:														
Baton Rouge	155	155	124	155	155	124	124	į	-	-	******			
Bossier City	86	132	86	132	132	98	86	-	:	i	-	1	•	
Houma	140	153	140	140	140	140	140		******				ļ	
Mean	131	147	121	142	142	121	121		-				-	1
MISSISSIPPI:		į	,	1	i	7	Ç							
Lorman	_ 119	153	119	153	153	119	119			i			-	
Meridian	122	127	115	127	122	115	115			1	İ		1	
Poplarville	124	167	124	167	167	124	124		-	ļ		1		-
State College	. 153	153	125	153	153	125	125	İ	-	-	-	-	-	1
Stoneville	134	134	134	134	134	134	134	-		-		44-4		
Mean	130	147	123	147	146	123	123							
THE X														
Lubbock	140	1	140	-	140		140	140	140	140			140	1 9
Weslaco	_ 112	ļ					93		-		112	106		106
Mean	126			1			116				1			
Mean of Means	126	145	125	144	142	120	119	140	140	140	112	106	140	106

TABLE 8.—Diseases rated 3 or 4 on 14 sweet sorghum sugar varieties.		'Mer. 'Mer. 'Mer. 'Mer. 'Mer. 'Mer. 64-7' 67-1' 67-14' 67-15' 68-7' 68-10'	<b>!</b> !		ZLS ZLS ZLS ZLS ZLS ZLS ZLS	GLS GLS GTS GTS GTS	R ZLS ZLS ZLS			S. GLS GLS INS		R GIG OTO	1 = Disease guine 1 = Disease present 2 = Disease quite noticeable, distributed over most or all of the area, but too sli be considered of economic importance. 3 = Disease probably covers enough to cause reduction of quality or yield. Esti leaf area destroyed probably up to 25 percent. 4 = Disease obviously responsible for some reduction in yield or quality. Lead destroyed estimated above 25 percent.
	Standard		GEORGIA:	***************************************		GLS	ZLS R	Meridian	Poplarville State College	GLS	ock	.	A = Anthracnose 2 DISEASE GLS = Bacterial stripe 1 = Disea GLS = Gray leaf spot 2 = Disea INS = Insecticide injury be congressed RS = Rough spot leaf stripe 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1